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动物分类学报

A TAXONOMIC STUDY ON THE ANT GENUS PHEIDOLOGETON MAYR (HYMENOPTERA, FORMICIDAE, MYRMICINAE) FROM CHINA

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Abstract Ten species and three subspecies of the ant genus *Pheidologeton* Mayr are treated in the paper. One of them is described as new to science, i. e. *P. zengchengensis* sp. nov. A key based on major worker caste to the known Chinese species of the genus is presented.

Key words Hymenoptera, Formicidae, *Pheidologeton*, taxonomy, China.

The ant genus *Pheidologeton*, was established by Mayr in 1862 based on the type species *Oecodoma diversa* Jerdon (= *Pheidologeton diversus* (Jerdon)). The genus consists of 27 species, 16 subspecies and 2 fossil species in the world (Bolton, 1995), most species distributed in the Indo-Australian, Oriental and Afrotropical regions. The first Chinese species of the genus, *P. vespillo*, was described by Wheeler in 1921, then in 1930 he reported 3 species and 3 subspecies, i. e. *P. affinis*, *P. diversus*, *P. vespillo*, *P. diversus* subsp. *draco*, *P. diversus* subsp. *fictus*, and *P. diversus* subsp. *laotinus*. Chou and Terayama recorded 4 species and 1 subspecies in Taiwan, added 2 species, i. e. *P. dentiviris* and *P. yanoi*, to Chinese ant fauna except the species and subspecies known in the mainland. While the species *P. dentiviris* was doubtful because it was described by Forel on the male only in 1913. Emery suggested that *P. dentiviris* was probably the male of *P. yanoi*, Wheeler suggested that it did not even belong to the genus *Pheidologeton*. Li and Tang described a species *P. nanningensis* from Guangxi in 1986. Zhou and Zheng studied the genus in Guangxi and described 3 species, i. e. *P. melasolenus*, *P. latinodus* and *P. trechideros* in 1997. When we studied the ants deposited in the Insect Collection of Zhongshan University, a new species was found. Ten species and three subspecies are recorded in China up to date. A key based on major worker caste to the known Chinese species and subspecies of the genus is given except for an uncertain species, *P. dentiviris* Forel.

The measurements and indices used in the paper are as defined by Bolton (1995): TL (Total Length), HL (Head Length), HW (Head Width), CI (Cephalic Index = HW × 100/HL), SL (Scape Length), SI (Scape Index = SL × 100/HW), PW (Pronotal Width), AL (Alitrunk Length). All measurements are expressed in mm.

Key to the known species of the genus Pheidologeton **Mayr in China (Based on major worker caste)**

1. Propodeal spines long, longer than, or at least more than half of the distance between the base of the two spines …… 2
   Propodeal spines short, less than 1/3 length of the distance between the base of the two spines …… 8
2. The maximum workers with their total length 10 to 11 mm …… P. diversus **subsp.** fictus **Forel**
   The maximum workers with their total length more than 14 mm …… 3
3. Head transversely striate in front …… P. diversus **subsp.** laotinus **Santschi**
   Head longitudinally striate in front …… 4
4. Occipital lobes of head longitudinally striate …… P. diversus **subsp.** draco **Shantschi**
   Occipital lobes of head transversely striate …… 5
5. Propodeal spines curved forward and inclined …… P. yanoi **Forel**
   Propodeal spines directly backward or erect …… 6
6. Propodeal spines backward, mesoscutellum slightly convex, with 8 yellow hairs …… P. nanningensis **Li et Tang**
   Propodeal spines erect, mesoscutellum very convex, with more than 10 yellow hairs …… 7
7. Front of head bearing a single ocellus; petiolar node with its upper border concave; color dark chestnut-brown; body very coarsely striate …… P. diversus **(Jerdon)**
   Front of head without ocellus; petiolar node not concave on its upper border; color chestnut-brown but lighter; striation on body much finer …… P. affinis **(Jerdon)**
8. Head and body smooth and shining in most part …… 9
   Head and body coarsely striate …… 11
9. Propodeal spines laterally compressed; petiolar node broadly rounded above in profile view …… P. latinodus **Zhou et Zheng**
   Propodeal spines thick at base and straight, not compressed; petiolar node narrowed above, more or less triangular in profile view …… 10

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10. Head with a coarse black line in occipital groove from occipital margin to the vertex; postpetiole 2 times broader than long; hairs abundant ..... P. melasolenus **Zhou** et **Zheng**
Head without a black line in occipital groove; postpetiole as broad as long; hairs very sparse ..... P. vespillo **Wheeler**
11. Propodeal spines compressed laterally, curved forward ..... P. trechideros **Zhou** et **Zheng**
Propodeal spines thick and straight, directed upward and slightly outward ..... P. zengchengensis **sp. nov.**

1 Pheidologeton diversus **(Jerdon), 1851**
Oecodoma diversa Jerdon, 1851: 109.
Phidologeton diversus (Jerdon); Bingham, 1903: 162.
Pheidologeton diversus (Jerdon); Wheeler, 1930: 68.

Distribution. China (Hongkong, Taiwan); Vietnam.

2 Pheidologeton affinis **(Jerdon), 1851**
Oecodoma affinis Jerdon, 1851: 110.
Phidologeton affinis (Jerdon); Bingham, 1903: 164.
Pheidologeton affinis (Jerdon); Wheeler, 1930: 68.

Distribution. China (Guangdong, Guangxi, Hongkong, Taiwan); India, Burma, Indonesia, Sulawesi, Australia.

3 Pheidologeton diversus **subsp.** fictus **Forel, 1911**
Pheidologeton diversus var. *ficta* Forel, 1911: 386.
Pheidologeton diversus subsp. *fictus* Forel; Wheeler, 1930: 68.

Distribution. China (Hongkong, Taiwan); Vietnam.

4 Pheidologeton yanoi **Forel, 1912**
Pheidologeton yanoi Forel, 1912: 57.

Distribution. China (Taiwan).

5 Pheidologeton dentiviris **Forel, 1913**
Pheidologeton dentiviris Forel, 1913: 192
Pheidologeton dentiviris Forel; Ettershank, 1966: 118.
Pheidologeton dentiviris Forel; Chou *et* Terayama, 1991: 79.

Distribution. China (Taiwan).

6 Pheidologeton diversus **subsp.** laotinus **Santschi, 1920**
Pheidologeton diversus v. *laotina* Santschi, 1920: 162.
Pheidologeton diversus subsp. *laotina* Santschi; Wheeler, 1930: 68.
Pheidologeton diversus subsp. *laotinus* Santschi; Bolton, 1995: 333.

Distribution. China (Guangdong, Hongkong); Pakoet, Laos, Indochina.

7 Pheidologeton diversus **subsp.** draco **Shantschi, 1920**
Pheidologeton diversus st. *draco* Shantschi, 1920: 163.
Pheidologeton diversus subsp. *draco* Shantschi; Wheeler, 1930: 68.

Distribution. China (Guangdong, Hainan); Vietnam.

8 Pheidologeton nanningensis **Li** et **Tang, 1986**
Pheidologeton nanningensis Li *et* Tang, 1986: 162.

Distribution. China (Guangxi).

9 Pheidologeton vespillo **Wheeler, 1921**
Pheidologeton vespillo Wheeler, 1921: 533.

Distribution. China (Shandong, Zhejiang, Jiangxi, Hunan).

10 Pheidologeton latinodus **Zhou** et **Zheng**
Pheidologeton latinodus Zhou *et* Zheng, 1997: 165.

Distribution. China (Guangxi).

11 Pheidologeton melasolenus **Zhou** et **Zheng**
Pheidologeton melasolenus Zhou *et* Zheng, 1997: 163.

Distribution. China (Guangxi).

12 Pheidologeton trechideros **Zhou** et **Zheng**
Pheidologeton trechideros Zhou *et* Zheng, 1997: 167.

Distribution. China (Guangxi, Jiangxi).

13 Pheidologeton zengchengensis **sp. nov.** (Figs. 1-2)

Holotype major worker. TL 12.8, HL 3.52, HW 3.43, CI 97, SL 1.28, SI 37, PW 1.71, PNL 0.88, PNH 0.88, PNW 0.78, PPL 0.59, PPH 0.80, PPW 1.03, ED 0.41.

Head slightly longer than broad, as broad in front as in the post, the sides slightly convex. Occipital margin widely emarginated, a deeply impressed narrow groove present down to the front. Mandible Major, masticatory margin without tooth in large worker, with two strong blunt apical teeth and two broad shorter basal teeth in the medium worker. Clypeus narrow, anterior border broadly sinuate. Antennal carinae short, divergent. Antennae slender. Eyes moderately large, placed at anterior 2/5 of the side of the head. Promesonotum convex, promesonotal suture lightly impressed. Mesoscutellum very prominent, metanotum distinct. Dorsum of propodeum slightly shorter than the declivity, and the declivity longitudinally concave in the middle. Propodeal spines thick at base, acute at tip, less than 1/3 length of the distance between the base of the two spines, directed backward and slightly outward. Petiole rather short, petiolar node thick and subtriangular in profile, upper margin slightly convex in the middle. Postpetiolar node transverse in dorsal view, as broad as petiolar node in major worker or twice as broad as the petiolar node in the medium worker.

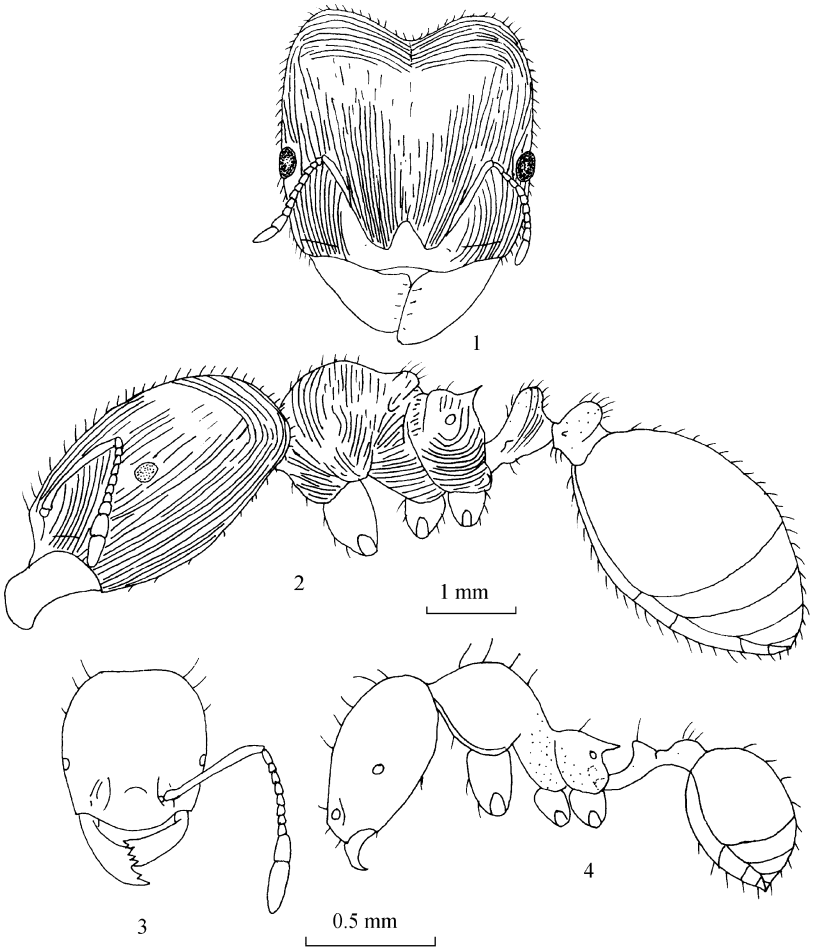
Head longitudinally striate anteriorly. Mandibles smooth and shinning. Occipital lobes of head,

pronotum, dorsum of propodeum, and petiolar node transversely striate. Spaces between striation smooth. Postpetiolar node and gaster smooth and shining. Erect hairs abundant on the whole body. Color dark brownish red. Mandibles and gaster blackish red. Antennae and legs paler.

Paratype 14 media workers. HL 1.30-2.80, HW 1.25-2.70, SL 0.65-1.08, CI 96, SI 40-52, PW 0.60-1.35, PNH 0.66, PNL 0.68, PNW 0.56, PPH 0.60, PPL 0.25-0.66, PPW 0.29-0.83, ED 0.31, TL 4.6-9.9. Occipital less concave, scutellum less prominent. Other characters are the same as the major worker. 7 minor workers. HL 0.50-0.60, HW 0.50-0.60, SL 0.30-0.50, SI 60-83, CI 98-100, PW 0.35-0.40, AL 0.60-0.75, ED 0.05-0.06. Occipital straight to feebly concave. Masticatory margin of mandible with five teeth. Antennal scapes short, close to occipital border. Mandible longitudinally striate. Head, pronotum and gaster smooth and shinning, mesopleurae and propodeum shagreened. Erect hair long and sparse. Color brown. Propodeum and peticel paler.

Holotype major worker, Taibai Slope, Zengcheng, Guangdong Province, South of China, 26 Sep. 1984, ZHANG Zhu-Xu leg. Paratype 14 media workers and 7 minor workers, Taihe Ancient Cave, Qingxin County, Guangdong Province, South of China, 25 Aug. 2005, ZHAO Shuang leg.

This new species resembles *P. trechideros* Zhou *et* Zheng, but the major worker differs from the later in mandibles smooth and shining, spaces between striation smooth, propodeal spine thick and straight, not curved forward. The minor worker differs from the later in promesonotum much higher, propodeal spine longer, not curved upward.



Figs. 1-4. *Pheidologeton zengchengensis* sp. nov. 1-2. Major worker. 3-4. Minor worker. 1, 3. Head in full-face view. 2, 4. Body in profile view.

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中国巨首蚁属昆虫分类研究 (膜翅目, 蚁科)

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摘 要 记述中国巨首蚁属 *Pheidologeton* 10 种和 3 亚种, 其中 1 新种即增城巨首蚁 *P. zengchengensis* sp. nov.。新种与粗纹巨首蚁 *P. trechideros* Zhou *et* Zheng 相似, 但大型工蚁与后者的区别是上颚光亮无刻纹, 体刻纹间面光亮无刻点, 并胸腹节刺圆而直, 不向前弯曲。新种的小型工蚁与粗纹巨首蚁的区别是前-中胸背板凸远高于后者, 并胸腹节刺直, 不向上弯。文中提供了中国已知 9 种 3 亚种的分种检索表, 另一种齿突巨首蚁 *P. dentiviris* Forel 因仅依据雄蚁描述而且分类地位不定, 未包括在检索表中。

关键词 膜翅目, 蚁科, 巨首蚁属, 分类, 中国.

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